

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/035623 A2

- (51) International Patent Classification⁷: **C07K 14/575** (74) Common Representative: ZEALAND PHARMA A/S; Smedeland 26B, DK-2600 Glostrup (DK).
- (21) International Application Number: PCT/DK2003/000651 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 2 October 2003 (02.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/415,626 2 October 2002 (02.10.2002) US (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): ZEALAND PHARMA A/S [DK/DK]; Smedeland 26B, DK-2600 Glostrup (DK).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): EBBEHØJ, Kirsten [DK/DK]; 65 Skyttebjerg, DK-2850 Nærum (DK). JEPSEN, Trine [DK/DK]; Håndværkerhaven 8, st. th., DK-2400 København NV (DK). KNUDSEN, Carsten Boye [DK/DK]; Magnoliavej 10, DK-2670 Greve (DK). LARSEN, Bjarne, Due [DK/DK]; Arildsgaard 5, 1. Th., DK-2700 Brønshøj (DK). KNOTT, David [GB/DK]; Ewaldsbakken 26, DK-2900 Hellerup (DK).
- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: STABILIZED EXENDIN-4 COMPOUNDS

(57) Abstract: The present invention disclosed compositions comprising a stabilized Exendin-4 (1-39) and related compounds. The invention describes stabilized Exendin-4 agonists that include at least one modified amino acid residue particularly at positions Gln 13, Met14, Trp25, or Asn28 of the Exendin-4 (1-39) molecule. Disclosed are preferred modifications of deaminated, hydrolyzed, oxidized, or isomerized reaction products of the specified amino acid residues corresponding to the same positions in the Exendin-4 molecule. The invention also relates to methods of making and using the stabilized Exendin compounds, such as for the treatment of diabetes.

WO 2004/035623 A2